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Ohio Farmers Who Sell Production Inputs: The Case of Farmer - Seed Dealers

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Increasing farm costs accompanied by depressed farm prices have forced many farmers to look for strategies which can cut farm production costs and/or generate additional non-farm income. One strategy which may accomplish both is to sell farm inputs. Non-farm income is generated from selling the input(s) at the same time that the cost of the input(s) may be reduced because the farmer-input seller can purchase them either at wholesale prices or, more likely, at a higher volume discount due to aggregating his purchases with those of his customers.

Few studies have even tangentially addressed the phenomenon of farmer selling of inputs. Krentz, et. al and Smith, et. al found that, as farm size increased, the proportion of farmers with interest in a farm input or output marketing firm increased. Likewise, Hahn and Rigdon found that farmers who sold seed for an Ohio based regional seed corn company on average farmed more acres than the average Ohio farmer. Lastly, Smith, et. al, found that farmers who had partial or total ownership of a cotton gin could obtain substantial savings on the cost of inputs. The savings reached over seven percent of cotton production costs for

integrated farms over 2560 acres. This finding was obtained, however, by making an assumption that "Although the gins reported selling inputs to all customers at the same price, it would be a fallacy not to attribute at least the discounts reported by input suppliers to the integrated farm's production costs" (Smith, et. al, p. 13). Thus, Smith, et. al's finding can be taken only as suggestive of the potential cost savings that farmers can obtain from owning a business which sells inputs.

Given the paucity of information on farmer selling of inputs, a random sample of Ohio farm operators was surveyed about the revenue they earned from selling seed to farmers and about the discount relative to retail prices they received on seed bought for their own operation. Seed was chosen for analysis because it is generally perceived to be the input most often sold by farmers.

This article contains a discussion of the data generated by the survey, in particular, the characteristics of Ohio farmers who sold seed, the amount they sold, and the relationship between seed sold and seed discount. As background, the survey instrument and U.S. seed industry are described.

OHIO FARM OPERATOR SURVEY

A randomly selected sample of 2005 Ohio farm operators was surveyed during March of 1981. The mail survey was

limited to farm operators who farmed at least 100 acres. This limitation was arbitrarily selected in an attempt to limit the survey to commercial farm operators.

Usable surveys were obtained from 384 farm operators, yielding a 19.2 percent response rate. Comparison of the characteristics of respondents with the characteristics of Ohio farmers reported in the 1982 Agricultural Census revealed that large farm operators and corn, soybean, and wheat farmers were overrepresented among respondents. In contrast, no bias existed for farmers who produced livestock or livestock products.

The surveyed farm operators were asked to provide information on crop and livestock enterprises, on selected socio-economic characteristics such as age, education, and non-farm income, and on the average percent discount received for seed purchased during the preceding 12 months. The farmers were also asked to indicate the amount of revenue received from sales of seed and of fertilizer and pesticide during the previous 12 months. The following categories were provided: none, $1 - 5,000, $5,001 - 15,000, $15,001 - 30,000, $30,001 - 50,000, $50,001 - 100,000, $100,001 - 250,000, and $250,000+. Categories were used instead of asking for a specific amount because it was felt the response rate would be higher.

U.S. SEED INDUSTRY: A BRIEF HISTORY AND CURRENT SITUATION

Development of improved seeds dates from the inception of agriculture. Most early development efforts were undoubtably conducted by private farmers. In a break with this tradition, the U.S. Congress in 1839 appropriated public money to support seed research (Leibenluft p. 89). Responsibility to test and develop new seeds was given to the Department of Agriculture. Public involvement expanded with passage in 1887 of the Hatch Act, which established research stations in every state.

After 1887 and until 1930, virtually all seed research in the U.S. was publicly supported (Leibenluft p. 89). However, beginning in the 1930's the proportion of seed developed by private companies began to increase slowly (Leibenluft p. 80). This trend accelerated with passage in 1970 of the Plant Variety Protection Act, which provided 17 years of patent protection for new seeds (Leibenluft p. 96).

The financial payoff for developing successful new seeds is substantial since in 1982 U.S. farmers spent 3.7 billion dollars on seed (Farm Production Expenditures, 1982, p. 11). Expenditures on seed corn, the largest single seed expenditure item, totaled approximately 1.7 billion dollars.[1]

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[1] This estimate equals the seeding rate (1/3 bu/acre) multiplied by 81.9 million acres planted multiplied by average price paid for seed corn ($63.50/bu). (Crop Production Acreage, p. B-5 and Agriculture Prices - Annual, p.110).

Currently about 80 percent of the U.S. seed corn market is controlled by eight firms with the remaining 20 percent distributed among 200 regional companies (Leibenluft, p. 113).

Several sources in the seed industry estimated that about 70 percent of the seed corn sold in Ohio and nationwide goes through farmer dealers (1983 Seed Survey, Rindfuss, Hock, and Prindle). No consistent estimate could be obtained for the proportion of soybean or wheat seed sold through farmer dealers, but all sources agreed it was substantially below the figure for corn. They also agreed the proportion was increasing since private companies are producing a growing proportion of soybean and wheat seed.

SELECTED CHARACTERISTICS OF FARMERS WHO SOLD SEED

About 15 percent of the survey respondents reported selling seed to farmers. Of those who sold seed 76 percent sold less than $5,000; eight percent had sales of $5,001 - 15,000; three percent had sales of $15,001 - 30,000; five percent had sales of $30,001 - 50,000; three percent had sales of $50,001 - 100,000; and three percent had sales of $100,001 - 250,000. Using the midpoints of the categories, the average amount sold was approximately $11,000. A similar figure was reported by Hahn and Rigdon in a 1980 study of an Ohio based regional seed corn company. Given the small number of respondents who reported revenue in any of the categories

over $5,000, a single category, $5,000 plus, was created to improve confidence in the statistical analysis.

In contrast to selling seed, 52 percent of the survey respondents reported buying at least some of their seed from farmers.[2] As farm size increased, percent who bought seed from farmers also increased. For example, 44 percent of respondents who farmed 100-259 acres purchased some seed from farmers compared with 77 percent for those who farmed more than 1000 acres. A similar relationship with farm size was found for Georgia farmers (Fletcher and Hubbard).

The respondents who sold seed, especially more than $5,000, were more likely to be younger than 40 (Table 1) and to have graduated from college (Table 2). These findings are statistically significant at the one and six percent levels of confidence respectively. The relative youth of the farmers who sold seed may in part reflect their need to generate capital either to expand or to remain in farming.

The survey respondents who sold seed were more likely to farm over 500 acres (Table 3). Those respondents who sold more than $5,000 of seed were also more likely to have livestock sales over $50,000 (Table 4) and to have less than $5,000 in non-farm income excluding income earned from selling agricultural inputs (Table 5). All findings are

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[2] Farmers who sold seed were instructed to include as purchased from farmers the amount they bought for their own farm from the seed company they represented.

Table 1: Age of Farm Operator by Seed Sales for Farm Operators with Farms of at Least 100 Acres, Ohio, 1980-1981.

Gross Revenue from Seed Sales a/	Age of Operator: Under 30	30-39	40-49	50-59	60+	Total b/
	---percent of farm operators---					
None	7	18	23	30	22	100
$1 - $5000	11	27	39	16	7	100
Over $5000	14	43	21	14	7	100
All Farmers	8	20	25	28	20	100

a/ Number of observations per category: None, 319; $1-$5000, 44; Over $5,000, 14; All Farmers, 377.

b/ Total may not add to 100 due to rounding.

SOURCE: Original Survey Data, March 1981.

Table 2: Education of Farm Operator by Seed Sales for Farm Operators with Farms of at Least 100 Acres, Ohio, 1980-1981.

Gross Revenue from Seed Sales a/	Education of Operator: Grades 1 - 11	High School Grad.	Some College	College Degree b/	Total c/
	---percent of farm operators---				
None	11	55	20	14	100
$1-$5000	2	62	16	20	100
Over $5000	14	36	14	36	100
All Farmers	11	55	19	15	100

a/ Number of observations per category: None, 319; $1-$5,000, 45; Over $5,000, 14; All Farmers, 378.

b/ Includes B.S., B.A. and post graduate work.

c/ Total may not add to 100 due to rounding.

SOURCE: Original Survey Data, March 1981.

Table 3: Farm Size by Seed Sales for Farm Operators with Farms of at Least 100 Acres, Ohio, 1980-1981.

Gross Revenue from Seed Sales a/	Acres of All Land in Farm 100-259	260-499	500-999	1000+	Total b/
	---percent of farm operators---				
None	50	26	20	5	100
$1 - $5000	36	20	29	16	100
Over $5000	7	21	57	14	100
All Farmers	47	25	22	6	100

a/ Number of observations per category: None, 316; $1-$5,000, 45; Over $5,000, 14; All Farmers, 375.

b/ Total may not add to 100 due to rounding.

SOURCE: Original Survey Data, March 1981.

Table 4: Livestock Sales by Seed Sales for Farm Operators with Farms of at Least 100 Acres, Ohio, 1980-1981.

Gross Revenue from Seed Sales a/	Livestock Sales None	$ 1 - $15,000	$15,001-$50,000	$50,000+	Total b/
	---percent of farm operators---				
None	36	26	17	21	100
$1 - $ 5,000	31	29	29	12	100
Over $ 5,000	29	7	14	49	100
All Farmers	36	25	18	21	100

a/ Number of observations per category: None, 293; $1-$5,000, 35; Over $5,000, 14; All Farmers, 342.

b/ Total may not add to 100 due to rounding.

SOURCE: Original Survey Data, March 1981.

Table 5: Non-farm Income Excluding Income Earned from Selling Agricultural Inputs by Seed Sales for Farm Operators with Farms of at Least 100 Acres, Ohio, 1980-1981.

Gross Revenue from Seed Sales a/	Non-Farm Income					
	None	$ 1- $5,000	$5,001- $15,000	$15,001- $30,000	$30,000+	Total a/
	---percent of farm operators---					
None	27	19	25	21	9	100
$ 1 - $ 5,000	27	22	27	16	9	100
Over $ 5,000	50	36	14	0	0	100
All Farmers	27	19	25	19	9	100

a/ Number of observations per category: None, 317; $1-$5,000, 45; Over $5,000, 14; All Farmers, 376.

b/ Total may not add to 100 due to rounding.

SOURCE: Original Survey Data, March 1981.

statistically significant at the one percent level of confidence. Taken together, they suggest that farmers who sold more than $5,000 of seed were more likely to be full time farmers than either farmers who sold no seed or less than $5,000 of seed.

Respondents who sold more than $5,000 of seed were concentrated in the 500-999 acre category. This observation along with the lower amount of non-farm income excluding income from selling farm inputs earned suggest that selling seed may substitute for a job off the farm and/or farm enlargement through land acquisition. Furthermore, since a seed dealership can be operated from the farmstead, it presents less conflict with a livestock enterprise than does an off-farm job. Thus, the livestock enterprise(s) can be expanded or at least maintained when selling seed (or other inputs). This combination of livestock and a seed dealership further reduces the need for a job off the farm.

Seed may be only one of several inputs handled by a farmer. Those respondents who sold seed were also more likely to have sold fertilizer and pesticides (Table 6), a relationship statistically significant at the one percent confidence level. In addition, all respondents who sold more than $10,000 of fertilizer and pesticides sold more than $5,000 of seed. Thus, some of the surveyed farm operators were significant suppliers of a range of farm inputs.

Selling seed was also associated with a greater dis-

count on the seed purchased for the farming operation (Table 7). Furthermore, the greater the amount of seed sold, the greater the percent of respondents who reported a discount greater than 10 percent. The relationship between seed discount and selling seed is statistically significant at the one percent confidence level.

The average discount was four percent for respondents who sold no seed, seven percent for respondents who sold between $1 and $5,000 of seed, and ten percent for respondents who sold more than $5,000 of seed. Assuming that $20.00 per acre is the cost of seed corn, these average discounts imply that farmers who sold more than $5,000 of seed paid $1.20 per acre less for seed corn than farmers who sold no seed (Ohio Crop Enterprise Budgets, 1984).

CONCLUSIONS

For most survey respondents who sold seed the seed dealership was not an important source of income. However, some farm operators sold substantial amounts not only of seed but also of fertilizer and pesticides. Selling seed was associated with a greater discount on seed purchased for the farming operation. Thus, selling seed can apparently improve the financial position of the farming operation (provided the seed dealership is efficiently managed). The twin benefits of generating revenue while lowering farm production costs

may spur farmers who sell seed to compete aggresively with other traditional seed suppliers, such as elevators and retail stores. In fact, the ability to save on production costs may give farmers who sell seed an advantage. Thus, traditional seed suppliers who are not farm operators may face increasing competition from farmers who also sell seed.

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